

**What is claimed is:**

1. An apparatus to communicate a set of data symbols  $d(i)$  where  $i = 1, \dots, n$ , the apparatus comprising:

a set of transmission lines  $l(i)$  where  $i = 1, \dots, n$ , where transmission line  $l(i)$  propagates a signal  $x(i)$  for  $i = 1, \dots, n$ ;

a set of receivers  $r(i)$  where  $i = 1, \dots, n$ , wherein receiver  $r(i)$  is connected to transmission line  $l(i)$  to receive the signal  $x(i)$  for each  $i = 1, \dots, n$ ;

a set of drivers  $t(i)$  where  $i = 1, \dots, n$ , where driver  $t(i)$  is connected to transmission line  $l(i)$  to transmit the signal  $x(i)$  for each  $i = 1, \dots, n$ ; and

a mapper to map the set of data symbols  $d(i)$  to the signals  $x(i)$  for  $i = 1, \dots, n$ , wherein for each  $i = 1, \dots, n$ ,  $x(i)$  is a function of  $d(i)$  and at least one  $d(j)$  for  $j \neq i$ .

2. The apparatus as set forth in claim 1, wherein the mapper comprises:

a table, wherein the table stores words addressed by the set of data symbols, wherein for each  $i = 1, \dots, n$ , the driver  $t(i)$  transmits the signal  $x(i)$  in response to a word stored in the table.

3. The apparatus as set forth in claim 1, wherein the mapper comprises:

a finite state machine, wherein the finite state machine in response the set of data symbols provides words to the set of drivers, wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word.

4. The apparatus as set forth in claim 1, wherein the set of transmission lines is such that transmission line  $l(i)$  for an  $i$  has capacitive coupling with another transmission line  $l(j)$  where  $j \neq i$ .

5. The apparatus as set forth in claim 1, wherein for each  $i = 1, \dots, n$ , receiver  $r(i)$  provides an estimate of  $d(i)$  based upon the signal  $x(i)$  independently of  $x(j)$  for  $j \neq i$ .

6. The apparatus as set forth in claim 5, wherein the mapper comprises:  
a table, wherein the table stores words addressed by the set of data symbols,  
wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word stored in the table.

7. The apparatus as set forth in claim 5, wherein the mapper comprises:  
a finite state machine, wherein the finite state machine in response the set of data symbols provides words to the set of drivers, wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word.

8. The apparatus as set forth in claim 5, wherein the set of transmission lines is such that transmission line  $l(i)$  for an  $i$  has capacitive coupling with another transmission line  $l(j)$  where  $j \neq i$ .

9. A computer system comprising:

a set of transmission lines  $l(i)$  where  $i = 1, \dots, n$ , where transmission line  $l(i)$  propagates a signal  $x(i)$  for  $i = 1, \dots, n$ ;

a first die comprising:

a set of drivers  $t(i)$  where  $i = 1, \dots, n$ , where driver  $t(i)$  is connected to transmission line  $l(i)$  to transmit the signal  $x(i)$  for each  $i = 1, \dots, n$ ;

a mapper to map a set of data symbols  $d(i)$  to the signals  $x(i)$  for  $i = 1, \dots, n$ , wherein for each  $i = 1, \dots, n$ ,  $x(i)$  is a function of  $d(i)$  and at least one  $d(j)$  for  $j \neq i$ ; and

a second die, the first die connected to the second die by the set of transmission lines, the first die to communicate the set of data symbols  $d(i)$  where  $i = 1, \dots, n$  to the second die, the second die comprising:

a set of receivers  $r(i)$  where  $i = 1, \dots, n$ , wherein receiver  $r(i)$  is connected to transmission line  $l(i)$  to receive the signal  $x(i)$  for each  $i = 1, \dots, n$ .

10. The apparatus as set forth in claim 9, wherein the mapper comprises:

a table, wherein the table stores words addressed by the set of data symbols, wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word stored in the table.

11. The apparatus as set forth in claim 9, wherein the mapper comprises:

a finite state machine, wherein the finite state machine in response the set of data symbols provides words to the set of drivers, wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word.

12. The apparatus as set forth in claim 9, wherein the set of transmission lines is such that transmission line  $l(i)$  for an  $i$  has capacitive coupling with another transmission line  $l(j)$  where  $j \neq i$ .

13. The apparatus as set forth in claim 9, wherein for each  $i = 1, \dots, n$ , receiver  $r(i)$  provides an estimate of  $d(i)$  based upon the signal  $x(i)$  independently of  $x(j)$  for  $j \neq i$ .

14. The apparatus as set forth in claim 13, wherein the mapper comprises:  
a table, wherein the table stores words addressed by the set of data symbols,  
wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word stored in the table.

15. The apparatus as set forth in claim 13, wherein the mapper comprises:  
a finite state machine, wherein the finite state machine in response the set of data symbols provides words to the set of drivers, wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word.

16. The apparatus as set forth in claim 13, wherein the set of transmission lines is such that transmission line  $l(i)$  for an  $i$  has capacitive coupling with another transmission line  $l(j)$  where  $j \neq i$ .

17. A method to provide crosstalk equalization, the method comprising:

mapping a set of data symbols  $d(i)$ ,  $i = 1, \dots, n$  to a set of signals  $x(i)$ ,  $i = 1, \dots, n$ , wherein for each  $i = 1, \dots, n$ ,  $x(i)$  is a function of  $d(i)$  and at least one  $d(j)$  for  $j \neq i$ ; and

transmitting the set of signals on a set of transmission lines  $l(i)$ ,  $i = 1, \dots, n$ , where for each  $i = 1, \dots, n$ ,  $x(i)$  is transmitted on transmission line  $l(i)$ .

18. The method as set forth in claim 17, further comprising:

receiving the set of signals by a set of receivers  $r(i)$  where  $i = 1, \dots, n$ , wherein for each  $i = 1, \dots, n$ , receiver  $r(i)$  estimates the data symbol  $d(i)$  based upon the signal  $x(i)$  independently of the signals  $x(j)$  for  $j \neq i$ .

19. A set of drivers  $t(i)$ , where  $i = 1, \dots, n$ , to communicate a set of data symbols  $d(i)$ , where  $i = 1, \dots, n$ , where driver  $t(i)$  is to transmit a signal  $x(i)$  for each  $i = 1, \dots, n$ , the set of drivers comprising:

a mapper to map the set of data symbols  $d(i)$  to the signals  $x(i)$  for  $i = 1, \dots, n$ , wherein for each  $i = 1, \dots, n$ ,  $x(i)$  is a function of  $d(i)$  and at least one  $d(j)$  for  $j \neq i$ .

20. The set of drivers as set forth in claim 19, wherein the mapper comprises:  
a table, wherein the table stores words addressed by the set of data symbols,  
wherein for each  $i = 1, \dots, n$  driver  $t(i)$  transmits the signal  $x(i)$  in response to a word  
stored in the table.

21. The set of drivers as set forth in claim 20, wherein the mapper comprises:  
a finite state machine, wherein the finite state machine in response the set of data  
symbols provides words to the set of drivers, wherein for each  $i = 1, \dots, n$ , driver  
 $t(i)$  transmits the signal  $x(i)$  in response to a word.